

NON ADHERENCE TO DIABETIC TREATMENT IN MULAGO HOSPITAL, UGANDA: PREVALENCE AND ASSOCIATED FACTORS.

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Background 1

- Adherence at about 50% in chronic illnesses & lower for lifestyle prescriptions (Sackett LD et al, 1991).
- Diabetes is one of the most psychologically and behaviorally demanding of the chronic diseases
- Frequent self monitoring of blood glucose, dietary modifications, exercise, & taking drugs on schedule.
- Achieving optimal glucose control through strict adherence to medications, diet, & exercise so as to minimize long term complications emphasized

Background 2

- Previous studies have found sub-optimal adherence to diabetic treatment ranging from 23 to 77% (Blanca Rosa et al, 1997, Melikian C et al, 2002, & others)
- Studies have generated varied results on factors associated with non-adherence (Aljaseem LI et al, 2002, Bhrett A, 2003, Garay-Sevilla et al, 1995, etc)
- Many of the samples used highly selected & studies done in developed countries
- Aim of study was to determine the prevalence & factors associated with non-adherence to diabetic treatment

Methods 1

- Cross-sectional study with quantitative and qualitative methods of data collection.
- Enrolled 419 patients from Mulago hospital diabetic clinic & inpatients ward for quantitative data.
- Systematic random sampling & consecutive sampling used to sample from diabetic clinic & from inpatients medical ward respectively.
- Key informant interviews for qualitative data & key informants selected purposively

Methods 2

- **Inclusion criteria**

having diabetes, aged at least 18 years, attending diabetic clinic or admitted on the medical wards during study period & giving informed consent.

- **Exclusion criteria**

Very ill & those newly diagnosed with diabetes (less than 1 month).

7 patients were excluded because they were very ill & 32 patients because they were newly diagnosed with diabetes.

Measurements

- **Independent Variables**

socio-demographic characteristics of patients, knowledge about DM, duration of DM, availability of drugs at the hospital pharmacy, health education, social support, use of alternative medicines, patient's income, adverse drug events, complexity of drug regimen, drug affordability

- **Dependent variable**

Non-adherence to diabetic treatment. Taking less than 80% of medications.

Data analysis

Quantitative

- Univariate analysis for general descriptions & prevalence of non-adherence
- Bivariate analysis using OR, p-values & 95% CI
- Factor analysis used for data reduction
- Multivariate analysis using logistic regression

Qualitative

- Transcribed & analyzed according to themes

Description of participants

Characteristic		Participants [n, (%)]
Sex	Females	292 (69.4)
	Males	129 (30.6)
Age	18-50	219 (52.0)
	51-88	202 (48.0)
Marital status	Married	230 (54.8)
	Single	78 (18.6)
	Widowed	64 (15.2)
	Divorced	48 (11.4)
Education level	None	53 (12.7)
	Primary	202 (48.4)
	Secondary	122 (29.3)
	Tertiary	40 (9.6)
Occupation	Unemployed	169 (40.3)
	Employed	250 (59.7)

Non-adherence to diabetic treatment

Item	Frequency	%
According to drug type*		
Metformin (n = 220)	70	31.8
Glibenclamide (n = 193)	54	28.0
Insulin soluble (n = 177)	46	26.0
Insulin Lente (n = 173)	42	24.3
Tolbutamide (n = 10)	3	30.0
Glipizide (n = 3)	2	66.7
According to gender		
Females (n = 291)	97	33.3
Males (n = 128)	21	16.4
According to age-group		
18-50 (n = 217)	66	30.4
51-89 (n = 202)	52	25.7
Overall non-adherence (n = 419)	118	28.2

Bivariate analysis 1

Variable	OR	95% CI	p
Gender			
Males	0.39	0.23 - 0.67	0.001
Females			
Education level			
None or primary	1.66	1.15 - 2.00	0.03
Secondary or tertiary			
Understanding regimen			
Well	0.46	0.22 - 0.97	0.04
Not well			

Bivariate analysis 2

Variable	Odds ratio	95% CI	p
Drugs patient can afford			
All	0.53	0.35-0.81	0.004
Some / None			
Social support			
Yes	0.57	0.37-0.88	0.01
No			
Using alternative medicines			
Yes	1.61	1.04-2.48	0.03
No			

Bivariate analysis 3

Variable	OR	95% CI	p
Health education in 6 months			
None or one	2.10	1.15-3.84	0.02
Two or more			
Time since health education			
0-7 months	0.56	0.34-0.94	0.03
> 7 months			
Time since seen health worker			
0-3 months	0.32	0.19-0.54	<0.001
> 3 months			

Logistic regression 1

Variable	OR	95% CI	P-value
Time since last seen health worker			
0-3 months	0.03	0.01- 0.20	<0.001
> 3 months	1.00		
Gender			
Males	4.66	1.07-20.32	0.040
Females	1.00		
Health education sessions in last 6 months			
None or one	2.11	0.98 - 4.53	0.055
Two or more	1.00		

Logistic regression 2

Variable	OR	95% CI	P
Interaction terms			
Time since seen by health worker & affordability	5.87	1.79 -19.24	0.003
Sex & affordability	0.20	0.09 - 0.48	<0.001
Confounders			
Time since last had health education			
0-7 months	1.06	0.56 - 2.01	0.853
> 7 months			
Education			
None or Primary	1.36	0.72 - 2.57	0.347
Secondary or tertiary			

Limitations of the study

- Self reports of non-adherence leading to over estimation of adherence
- Patients asked to recall their drug taking habits in previous week, some may forget.
- Very sick patients excluded leading to selection bias.
- Non-response to certain questions

Conclusions

- Prevalence of non-adherence needs to be lowered.
- Need to target high risk groups like the men.
- Frequent health education & determine best methods of delivering.
- Shorter time between hospital appointments.
- Interactions seen need to be studied further

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